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WINTERY ALIMENTATION OF WINTERING MALLARD MASSES ON THE REACH OF TISZA AT SZENTES—HÓDMEZŐVÁSÁRHELY BETWEEN 1971—1980

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Abstract

The paper examines the questions of alimentation and secondary production of mallards wintering in a 30 km long reach of Tisza in the cross-section of 10 years, during the interval of December—February. It is established, that the food of mallards gathering on the ice-free flowing water is ensured in 80—90% by corns of maize found on stubble-fields. 8—10 000 mallards are wintering on the examined area and they ingest an amount of food wich is equal to 225.479 megacalories.

Introduction

The Mártély and Pusztaszer landscape protection areas on the 30 km long reach of Tisza between Hódmezővásárhely and Szentes are natural values of international importance according to so called Ramsari Convention and because of this their ecological research is especially interested. The strongly serpentine Tisza here is covered by ice very rarely, so it ensures favourable wintering place for swimming and merganser water birds. In the case of such species wich take advantage of this en masse the problem of food-basis comes into prominence, because only long-lasting and sufficient food-supply can ensure their settling for a considerable period.

Mallards *(Anas platyrhynchos* L.) represent the most important biomass among wintery water birds of Tisza, they are characteristic wintering species here. Their gathering is conspicuous from December till the end of February when their masses scattered on frozen waters assemble here. Only an unimportant part of their food originates from the river-bed. The food source of mallards is ensured by ploughlands bordering the river in 30—40 km width. In this paper we want to give answers to the questions that averagely how great mass of birds is gathering in the examined living-space, what is their dominant food and how great values of calories menas the secondary production originating from this. We want to conclude the economic role and prospects of mallard masses wintering here like a practical utilization of all these.

Materials and Methods

The examined area is the 30 km long reach of Tisza taking up position northwards from Szeged—Fehértó main channel on the area of Pusztaszer and Mártély landscape protection areas. Its central co-ordinates are: 46° 25'—20° 20". I made mallard counting twice a month between

1971—1980 in December—January and February. I signed the amount indicated for one month with the mean of results. I collected monthly 5-5- individuals, so at the end of examination I had 150 stomach-content. From these the average daily food weight falling to one bird is 0.13 kg on the basis of this I made further calculations. I show in table the bird amount observed during 10 years. On the basis of individualnumbers falling to one year I calculated the average weight of consumed food according to percentage rate established from stomach content. I unified the single food-types converted into starch-value on the basis of tables established for the calculation of fodder-standards of domestic animals (the starch-value is a number wich informs about the total energetic nutrition power of single food-types. It expresses the food-value of lipoids, carbonhydrates, and proteins being in the food and indicates how much isolated starch is equal with 1 kg of examined food). Calory easily can be reckoned from starch-value, because 1 kg starch is equal with 2356 kilocalories resp. 2.356 megacalories (BAITNER 1966, HEROLD 1977).

Table 1. *Monthly average amounts of mallards*

Year	December	January	February
1971	1,650	1,400	1,850
1972	1,200	1,600	2,900
1973	1,980	2,500	3,800
1974	1,280	16,000	19,200
1975	12,800	12,000	14,500
1976	15,800	850	22,000
1977	8,000	20,000	14,800
1978	12,000	25,000	15,000
1979	19,500	12,000	17,000
1980	13,200	12,500	19,600
Average individualnumber:	8,750	10,280	13,060

Results

From the data obtained according to described method it is clear that the examined part of Tisza river valley is important gathering place of mallards during winter. The dominant food-basis is ensured by corns of maize, rice and weeds during this time. The role of maize is prominent wich is the result of technically not economic mechanical harvesting. It is obvious from the table that the amounts of mallards are increasing towards the end of examined period of time. The increasing tendency is in connection with the spreading of mechanical maize-harvest. Similar phenomenon can be experienced in the near Kardoskút landscape protection area in the case of mallards, cranes and wild-geese (STERBETZ 1979). I could determine the next species from the food eated in Tisza valley: *Chara* sp., *Lemna* sp., Cyprinidae sp., Chironomidae sp., remnants of aquatic insects, *Dreissena polymorpha,* remnants of *Planorbis.* But these enumerated foods were present only in traces their amount can't be valued percentally.

Discussion

The monocultural maise-cultivating systems near Tisza are very favourable wintery bases from the point of view of nature conservation. The harvest remained and scattered on stubbles ensures food for a great amount of granivorous birds here.

The ice-free flowing water and the safe food basis together lead to the development of traditions in the case of migratory mallards, its initial signs are already appearing obviously. Culture corn taken up in great quantities and calory-value is economic advantage because the remained corns should be lost but so they are utilized as valuable game by huntable mallards.

Table 2. *Calory-value of food taken up in the average of 10 years expressed in megacalories*

Month	Individual-number of mallards	Maize	Rice	Weed-corns	Total starchvalue kg	Mega-calory
		kg				
December	8,750	29,972 (85%)	1057 (3%)	4233 (12%)	25,393	59,826
January	10,280	39,356 (95%)	1657 (4%)	415 (1%)	32,898	77,508
February	13,060	45,636 (96%)	951 (2%)	951 (2%)	37,413	88,145
Totally	32,090	114,964 (92%)	3665 (3%)	5599 (5%)	95,704	225,479

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Telelő tőkés réce (Anas platyrhynchos L.) tömeges téli táplálkozása a Tisza Szentes—Hódmezővásárhelyi szakaszán, 1971—1980 időközében

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Kivonat

Az adatokból kitűnik, hogy a Tisza folyóvölgyének vizsgált szakasza téli időszakban jelentős vadréce gyülekezőhely. A tőkés récék domináló táplálékbázisát ebben az időszakban a környező szántóföldeken talált kukorica, rizs és gyommagvak biztosítják. Kiemelkedő itt a kukorica szerepe, amely a technikailag nem kellően gazdaságos gépi munka eredménye. A táblázatból szembetűnő, hogy a megfigyelt récemennyiségek a vizsgálati ciklus vége felé egyenletesen emelkednek. Ez a növekvő tendencia a gépesített kukoricabetakarítás elterjedésével áll összefüggésben. Hasonló jelenségek tapasztalhatók a közeli Kardoskúti-természetvédelmi területen a tőkés récék, vadludak és darvak esetében is (STERBETZ 1979). A Tisza völgyében felvett táplálékból az alábbi fajokat lehetett megállapítani: *Chara* sp, *Lemna* sp, Cyprinidae sp, Chironomidae sp, vízirovar maradványok, *Dreissena polymorpha, Planorbis* sp. törmelék. E felsoroltak azonban csak nyomokban voltak jelen, mennyiségük százalékosan nem értékelhető.

Masovna ishrana divlje patke (Anas platyrhynchos L.) na deonici Tise Szentes—Hódmezővásárhely tokom zimovanja u periodu 1971—1980. godine

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Abstrakt

Iz podataka je uočljivo da se istraživana deonica reke Tise javlja kao značajno zimsko sabiralište divlje patke. U toku zimske sezone u ishrani divlje patke dominira kukuruz, rizž i zrnevlje korovskih biljaka sa okolnih poljoprivrednih kultura. Značajna količina kukuruza se javlja usled tehnički nedovoljno ekonomičnog mašinskog branja. Iz tabele je uočljivo da se jata divlje patke ravnomerno povećavaju do kraja ciklusa posmatranja. Ova rastuća tendencija je u zavisnosti sa obimom mašinskog branja kukuruza. Slične su pojave uočene i na području nedalekog zaštićenog okruga Kardoskút u odnosu na divlju patku, divlje guske i ždralove (STERBETZ 1979). U ishrani divlje patke u dolini reke Tise još učestvuju u tragovima sledeće vrste, čija je količina u procentima beznačajna: *Chara* sp., *Lemna* sp., *Cyprinidae* sp., *Chironomidae* sp., ostaci vodenih insekata, *Dreissena polymorpha, Planorbis* sp.

МАССОВОЕ ЗИМНЕЕ ПИТАНИЕ КРЯКВЫ ОБЫКНОВЕННОЙ (Anas platyrhynchos L.), ЗИМУЮЩЕЙ НА УЧАСТКЕ РЕКИ ТИСЫ СЕНТЕШ—ГОДМЗЕВВАШАРХЕЛЬ, В ПЕРИОД 1971 Д1980 ГГ.

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Резюме

Согласно данных, полученных на основании приведенной методики, выявляется, что исследованный участок долины реки Тисы в зимний период является типичным местом сбора кряквы. Основной базой, обеспечивающей питание кряквы обыкновенной в пору этого года являются кукурудза, рис и семена сорных растений, произрастающих в окресностях на возделываемых полях. Преобладающая роль принадлежит здесь кукурудзе, что является результатом технического несовершенства работы сельськохозяйственных машин.

Из таблицы видно, что количество крякв к концу цикла исследования беспоерывно увеличиваотся.

Эта возрастающая тенденция находится в зависимости от распространения машинеой уборки кукурудзы. Случай подобных явлений с кряквой, гусем и журавлем можно наблюдтъ также на ближайшей Кордошкутской заповедной территории (Штербетз 1979). Из кормов, собранных в долине реки Тисы, удалось определить такие виды: CHARA sp., LEMNA sp.- CYPRINIDAE sp., CHIRONVMIDAE sp. остатки водных наекомых, отходы *Dreissena polyniorpha* встречаются здесь только в следах. Численность их в процентах не может быть оценена.